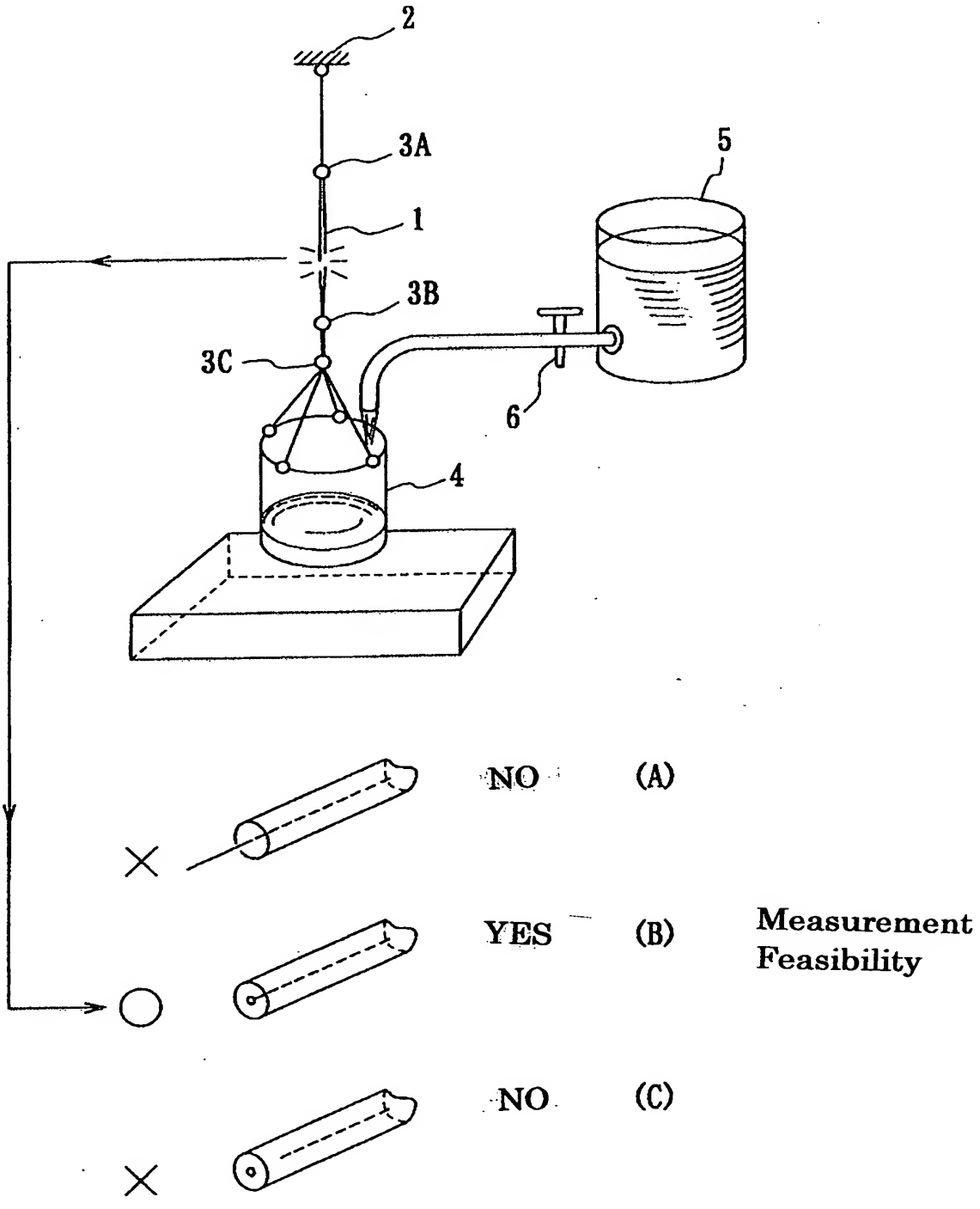
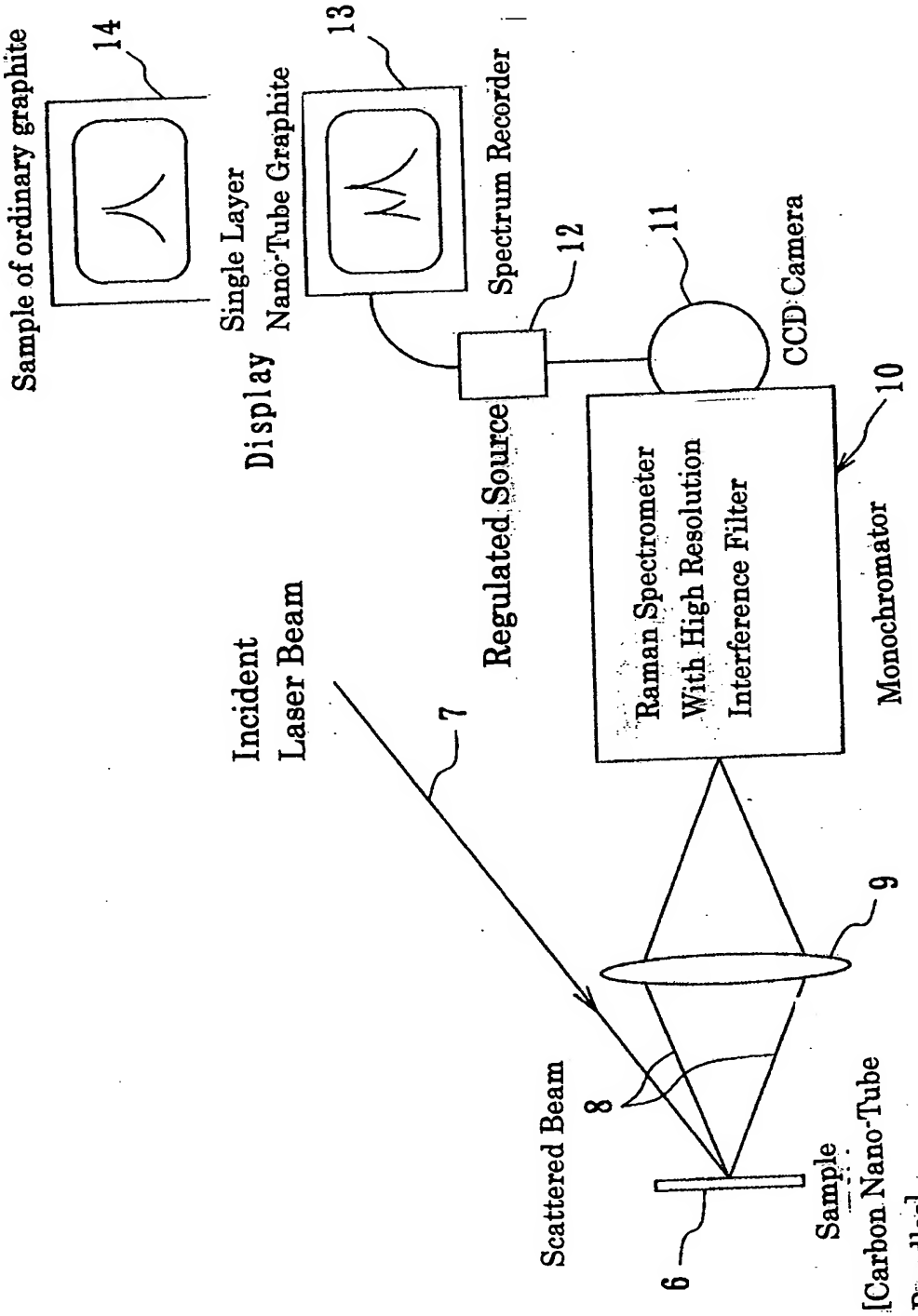
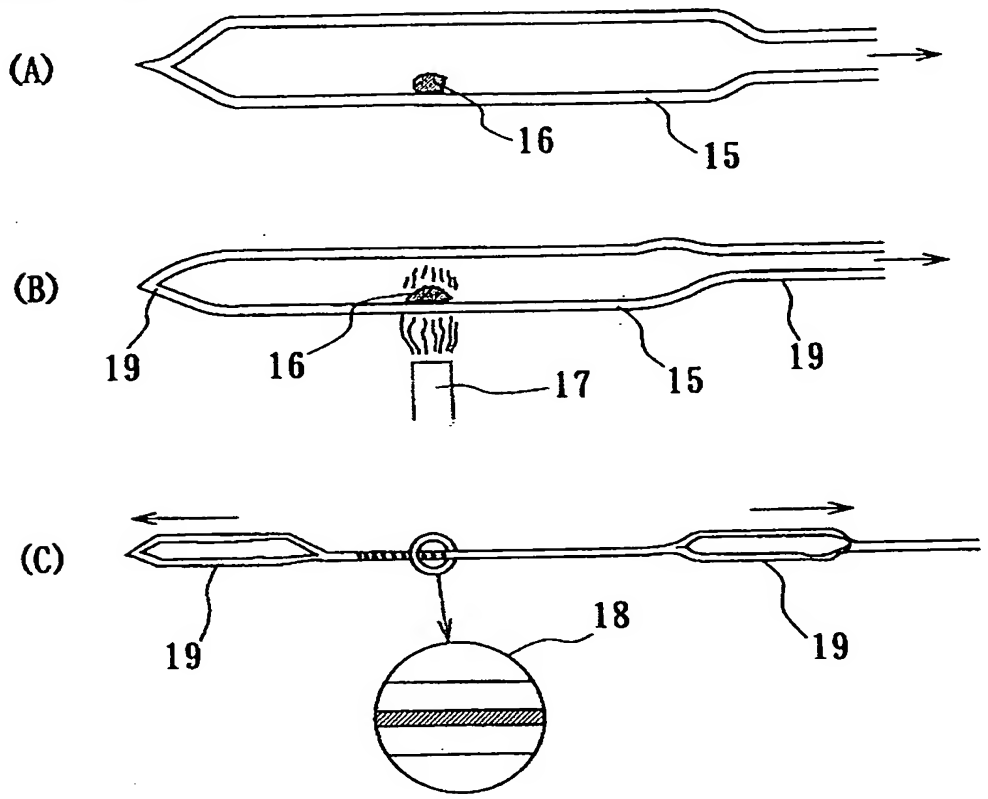
[Figure 1] The principle of measuring critical tension when the quartz~clad nano~tube bundles reach their limit for keeping the bundles from cutting off.



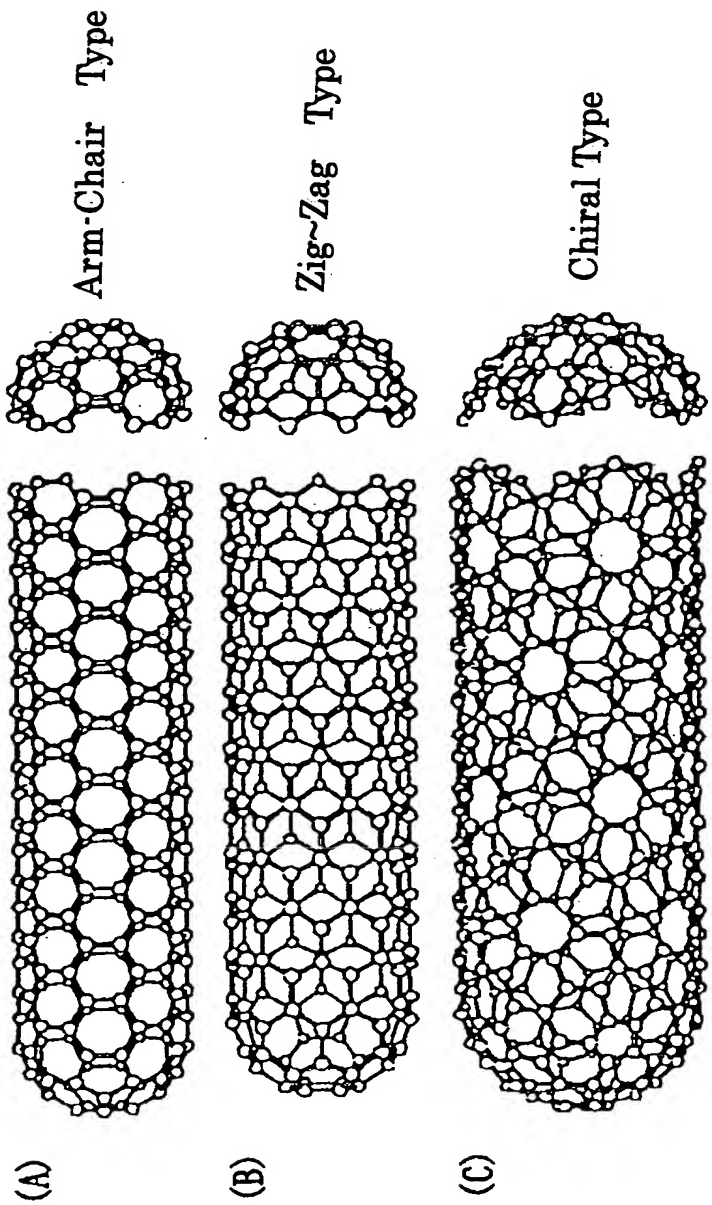
{Figure 2} The schematic diagram for measuring Raman spectra of the of the nano-tube bundles.



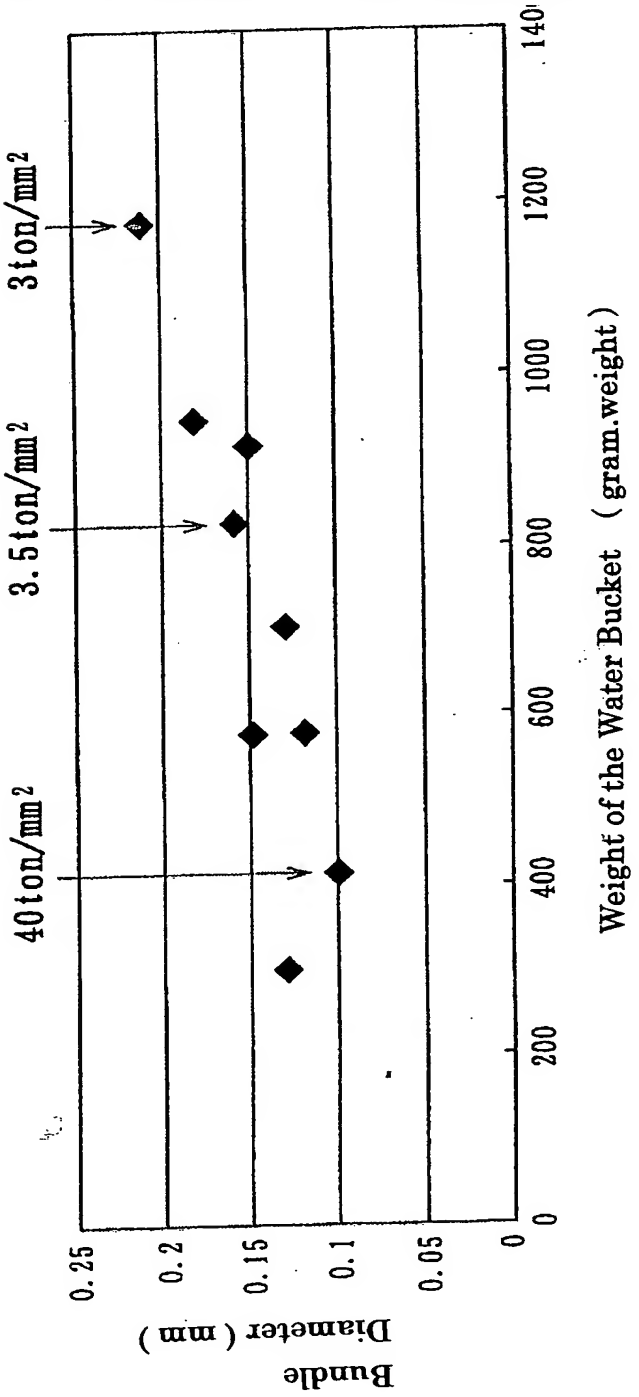
[Figure 3] The procedure for fabricating carbon carbon nano-tube bundles by first, heating the carbon nano~tube/quartz assembly, then subsequently quenching the assembly and while simultaneously extending the quartz tube longitudinally along its axis.



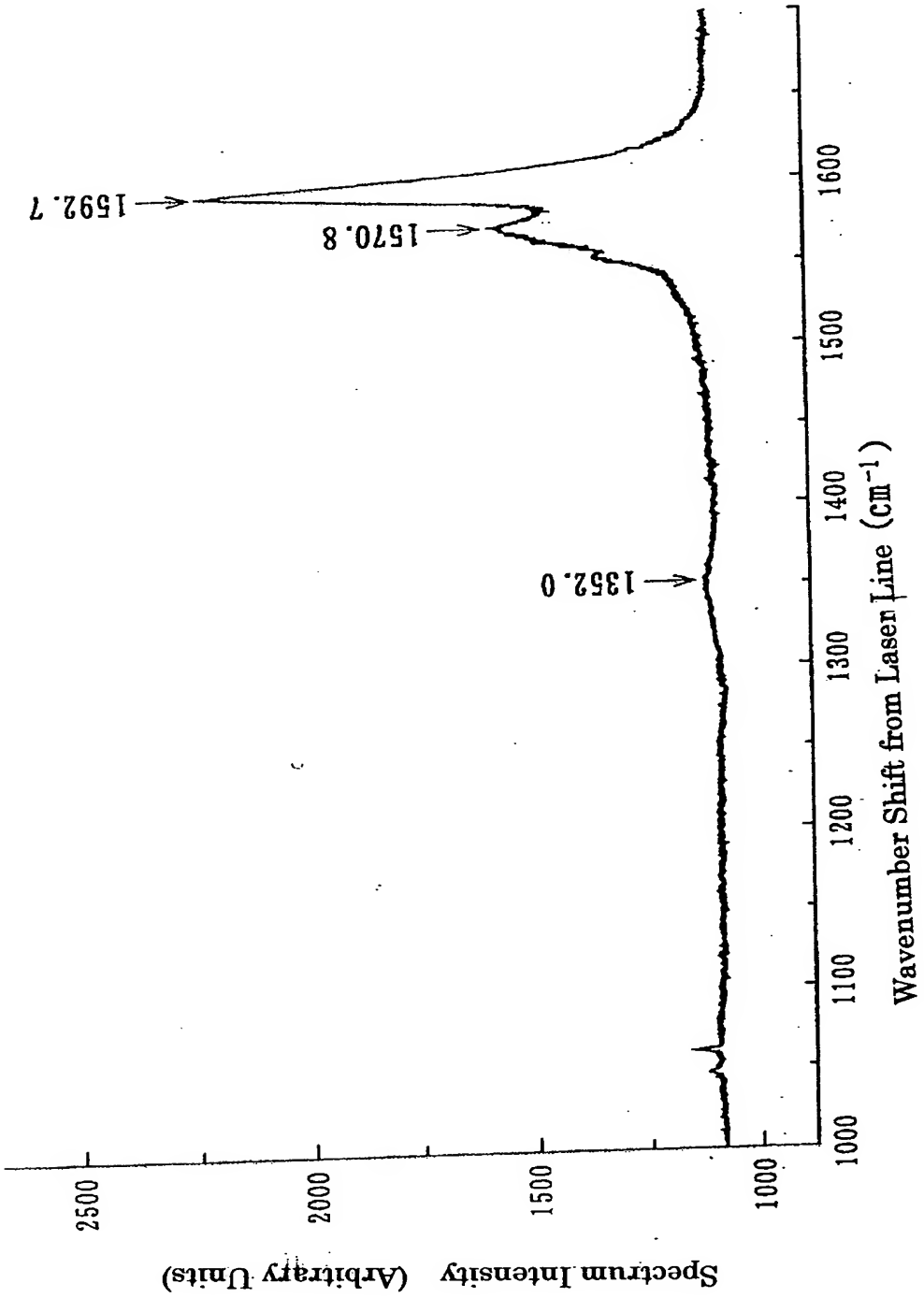
{Figure 4} Three types of molecular structures of carbon nano~tubes used in the present measurements. (A),(B) and (C) are, Arm-Chair Type, Zig-Zag type, and Chiral type, respectively.



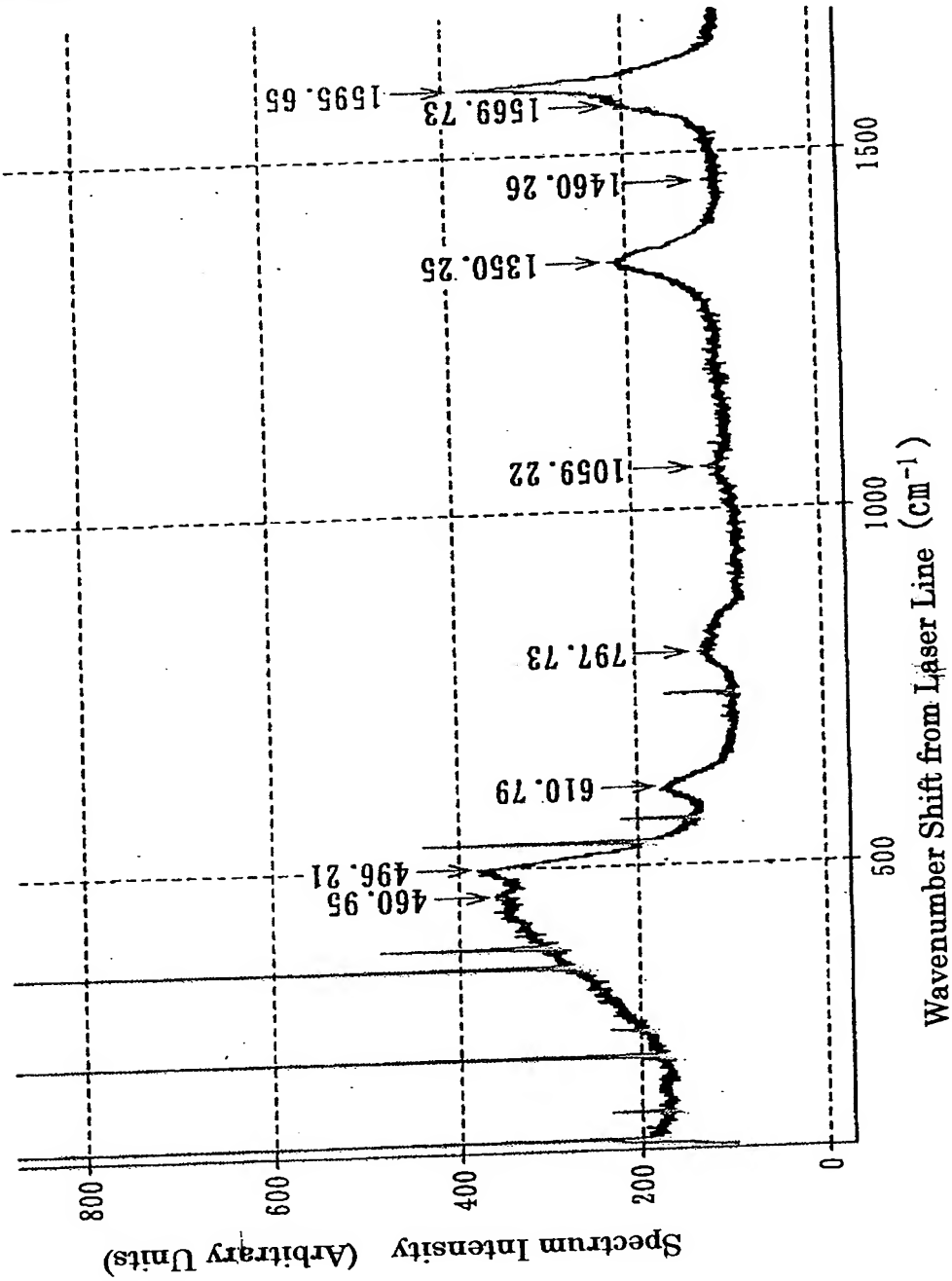
[Figure 5] The plot of the critical tension measured vs. the cross-sectional diameter. The water weight on the fiber is given as a parameter. A plot on the curve represents a sample being cut off at respective critical load.



[Figure 6] The Raman spectrum of a typical sanple of carbon nano~tube bundles clad in a quartz sheath.



{Figure 7} The Raman spectrum of a typical sample of carbon nano-tube fiber bundles clad in quartz sheath. The sample is quenched from a temperature near 1,200 C.



{Figure 8} The Raman spectrum of a typical sample of carbon nano-tube bundles with some imperfections Note the L~T splitting near 1580 cm^{-1} is not clearly resolved. Compare with Figure 6.